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ABSTRACT

The challenge to the dominance of rationality in educational philosophy presented by John Dewey and Donald Schon is examined in this paper. The paper identifies basic assumptions of their perspective and explains concepts of reflective thinking, which include biography, context of uncertainty, and "not-yet." A model of reflective thought is presented, which is based on biography, zone of uncertainty, "not-yet," knowledge, knowing-in-action, and reflection-in-action. A conclusion is that an understanding of Dewey's and Schon's ideas is necessary for reflective thought to affect educators' practices. One figure is included. (47 references) (LMI)

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DEWEY AND SCHÖN: AN ANALYSIS OF REFLECTIVE THINKING

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Thursday, October 24, 1991

". . . thinking enables us to direct our activities with foresight and to plan according to ends-in-view, or purposes of which we are aware. It enables us to act in deliberate and intentional fashion to attain future objects or to come into command of what is now distant and lacking. By putting the consequences of different ways and lines of action before the mind, it enables us to 'know what we are about' when we act. 'It converts action that is merely appetitive, blind, and impulsive into intelligent action.' . . . The being who can think is moved by remote considerations, by results that can be attained perhaps only after a lapse of years . . . it is in virtue of thought that given things are significant of absent things and that nature speaks a language which must be interpreted . . . Only when things about us have meaning for us, only when they signify consequences that can be reached by using them in certain ways, is any such thing as intentional, deliberate control of them possible." [1]

"In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he remain on the high ground where he can solve relatively unimportant problems according to prevailing standards of rigor, or shall he descend to the swamp of important problems and nonrigorous inquiry?"[2]

Introduction and Purpose

It is not rare for one to hear the term 'reflection' employed in conversations. "Let's be a bit more reflective," "I believe we ought to reflect more on that particular point," "approaching his topic reflectively, the speaker developed a persuasive case"; all are examples of how this term is used, not infrequently, in daily conversation. When one considers the context in which the term is employed and the array of meanings which the term seems to suggest, one derives a sense of looseness, a sense of a term being employed without any clear and precise understanding of its nature and the parameters within which it is designed to function. The term is, in other words, employed quite ubiquitously as an accepted form of thinking, though somehow one is never quite certain about just what is going on when this sort of thinking is being employed. This may be partly due to the existence for many centuries of a view of thinking and knowing which has stressed three kinds of thinking.

Deeply rooted in classical antiquity, for instance, this view has emphasized the importance of knowing, especially knowing for its own sake, which has been a powerful and in many ways an oppressive force.

Frankena points out that it was Aristotle who distinguished three kinds of disciplines. These disciplines were " (I) A *theoretical* science [which] employs the scientific or theoretical part of our *rational*[3] faculty and has as its end simply to know the truth about the world for its own sake. . . . (2) A *productive* science or art [which] employs the "deliberative" part of our rational faculty and also involves a kind of knowledge, but its purpose is the making of something useful or beautiful. . . . (3) *Practical* science [which] also employs the "deliberative" part of our reason and seeks a kind of knowledge, but its end is action or "doing" (not "making") and so it seeks knowledge in relation to desire or as a guide to conduct."[4] The *practical,* then, results in a form of knowledge which shapes behavior which is related to the achievement of an end. As Aristotle affirms ". . . . in the *practical sciences*[5] the end is not to attain a theoretical knowlede of any subject, but rather *to act*[6] in a certain way . . . to know what excellence is, is not enough; we must endeavor to acquire it and to act accordingly . . .[7]

During the long span of western history since Aristotle the force of scholasticism and, during the past three-hundred years, the emergence and acceptance of positivisitc thinking, the latter co-opted by

and wedded first to a primitive, more recently to an advanced, industrial order, have made the *rational* the dominant intellectual power. By 'rational' I mean the capacity and the tendency of humans to categorize, to order, to name their worlds of experience; while at the same time they pursue a tendency to accept their categories as certain and stable , reified images which enable them to anticipate and manage their daily encounters with the world in replicative ways.

The purpose of this paper is to provide the reader with an opportunity to examine the way in which the dominance and power of such rationality has been challenged by John Dewey and Donald Schön. (It is not insignificant here to note that Schön's Ph.D. thesis was an analysis of Dewey's opus Logic: The theory of inquiry).[8]

Method

To achieve this purpose I intend to (a) identify the basic assumptions which have guided my investigation of the work of both Dewey and Schön as it related to the purpose of this paper; (b) reveal, to the extent possible, how these thinkers constructed their understandings of a common array of ideas related to reflective thinking; and (c) reveal a physical model of reflective thought which reveals these common ideas in a way similar to the artifacts which we have all encountered in the

sciences, the arts, even the social sciences.

Assumptions

I assume that (a) enough of the writing of both Dewey and Schön has been examined to extract the significant attributes of reflective thought emphasized by each of these thinkers; (b) the conceptual structures which have been identified in this paper are among the most significant attributes of reflective thinking which these thinkers have stressed; and (c) language is not sufficient as a means for grasping the complexity of reflective thought.

Conceptual Structures

Both Dewey and Schön conceive of **Reflective Thinking** as consisting of what I suggest are three broad categories, **biography**, **context of uncertainty** and the **'not-yet'**. Within *biography* they seem to include (a) rationality, (b) certainty and stability, and (c) knowledge and knowing; within the *context of uncertainty* are (a) situation and environment, (b) practical and experience, (c) action; and (d) problem; within *'not-yet'* are (a) reflection, (b) future, and (c) consequences. Let us briefly examine each of these categories.

Biography

Biography as it is here being used suggests that which lies in the

past, in memory; experiences, beliefs, knowledges, desires, attitudes, values, skills, disposiions, emotions, frequently considered to be settled, stable, finished, which we carry with us as we encounter our daily experience.

Rationality

Dewey argued that, throughout history, ". . . rationalism has held that only conceptual subject-matter is capable of providing knowledge in its full sense."[9] The meanings and understandings derived from the theoretical categories which humans have constructed and which constitute the substance of the disciplines of knowledge are, in other words, the only forms of knowing of which they are capable. He stipulates this very clearly when he affirms in *Democracy and Education* that "... those who enjoy contemplation of a realm of meanings in whose active production they have had no share are practical rationalists."[10] Here, inferentially, we encounter in an unequivocal manner the disdain which Dewey expressed for the mere acceptance of ideas, of meanings which are handed down to us in what a thinker like Foucault would suggest is the 'stream of language' into which we are all cast at birth, from which we acquire many of those images and categories which entail prejudgments,predispositions, and intellectual orientations which

frequently oppress us in quite unconscious ways as we respond to the environments in which we participate.

Schön stresses his concern about rationality when he argues that "technical rationality is an epistemology of practice derived from positivist philosophy, built into the very foundations of the modern research university. Tehnical rationality holds that practitioners are the instrumental problem solvers who select technical means best suited to particular purposes. Rigorous professional practioners," Schön argues, "solve well-formed instrumental problems by applying theory and technique derived from systematic, preferably scientific knowledge."[11]

This form of rationality he claims, ". . . depends on agreement about ends. When ends are fixed and clear, then the decision to act can present itself as an instrumental problem. But when ends are confused and conflicting," he argues, "there is as yet no "problem" to solve. A conflict of ends cannot be resolved by the use of techniques derived from applied research. It is rather," Schön continues, "through the nontechnical process of framing the problematic situation that we may organize and clarify both the ends to be achieved and the possible means of achieving them."[12]

As far as professional knowledge and competency are concerned

Schön points out that "the systematic knowledge base of a profession is thought to have four essential properties. It is specialized, firmly bounded, scientific, and standardized. This last point is particularly important," he claims, "because it bears on the paradigmatic relationship which holds, according to Technical Rationality, between a profession's knowledge base and its practice."[13]

Continuing in the same vein, he points out that "from the perspective of Technical Rationality, professional practice is a process of problem *solving*. Problems of choice or decision are solved through the selection, from available means, of the one best suited to established ends. But with this emphasis on problem solving," he stresses, "we ignore problem *setting*, the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen."[14] (Italics in the original).

Certainty and Stability

Recognizing the plight of humans as they have encountered a world of ever changing characteristics, Dewey understood and sympathized with the craving for security and constancy in one's living which has characterized the efforts of humans, including those of philosophers, through the ages. Stressing this dialectical tension between the unstable

and the ultimate, he claimed that "the craving of human beings for something solid and unshakable upon which to rest is ultimate and unappeasable. Many philosophers," he argued, " have made the search for a principle of certitude their chief quest. They sought certainty, however, not because they were philosophers but because they were human. Certainty," to Dewey, " merely happened to be the name given to the object of their particular human desire for a harbor that cannot be troubled, a support that cannot be weakened. Fundamentals are the answer to man's cry for security, living as he does a life of uncertainty in a world that is always on the move." [15]

Schön, drawing on empirical evidence, attempts throughout his writings to show how professionals in very different sorts of practice approach conditions of uncertainty in quite similar ways. He has found that this is particularly true in regard to ". . . the artful inquiry by which they (professionals) sometimes deal with situations of uncertainty, instability, and uniqueness. This is," what he calls, "the pattern of reflection-in-action, . . . (a) "reflective conversation with the situation.". . In all of these examples," he has discovered, "inquiry begins with an effort to solve a problem as initially set. . . inquiry, however it may initiially

have been conceived," he has found, "turns into a frame experiment. . . the inquirer is willing to step into the problematic situation, to impose a frame on it, to follow the implications of the discipline thus established, and yet remain open to the situation's back-talk. Reflecting on the surprising consequences of his efforts to shape the situation in conformity with his initially chosen frame," Schön points out, the inquirer frames new questions and new ends in view."[16]

Knowing and Knowledge

Fully cognizant of the impact of one's biography on experience, Dewey argued that "all knowing and effort to know starts from some belief, some received and asserted meaning which is a deposit of prior experience, personal and communal. In every instance," he stated, "from passing query to elaborate scientific undertaking, the art of knowing criticizes a belief which has passed current as genuine coin, with a view to its revision. It terminates when freer, richer and more secure objects of belief are instituted as goods of immediate acceptance."[17]

Stressing the fact that knowing always emerges within a natural, social setting, Dewey pointed out that ". . . knowing is not the act of an outside spectator but of a participator inside the natural and social scene, [and that] the true object of knowledge resides in the consequences of

directed action . . . ."[18]

Amplifying the social, critical and purging nature of all knowing, he urged the position that ". . . knowing, including most emphatically scientific knowledge, is not outside social activity, but is itself a form of social behavior, as much so as agriculture or transportation. For," he emphasized, " it is something that human beings do, as they plow the earth and sail ships. On the critical, or 'purging' side, systematic rejection of all doctrines that associate knowing with 'mind' and an alleged individual ego, as something separate and self-enclosed, is required. On the positive side, this initial step demands systematic observation of the natural, the biological and societal, conditions by means of which knowing actually goes on."[19]

Schön employs the term ". . . *knowing-in-action* to refer to the sorts of knowhow we reveal in our intelligent action-publicly observable, physical performances like riding a bicycle and private operations like instant analysis of a balance sheet. In both cases," he stresses, "the knowing is *in the action.* [20] (Italics in the original).

Context of Uncertainty

By the context of uncertainty I mean that realm of human activity in which one finds oneself relating consciously, intellectually, imaginatively, physically. It is a reflective space in which a multiplicity of perspectives are encouraged, in which humans, while engaging in hot debate, nonetheless practice those skills and rules of intelligent self-management which enables communication to become increasingly worthwhile. It is a zone, in other words, in which there is a fundammental commitment to those values which Greenwood claims we associate with heterogeneity, respect for relevant diversity, reflection, radical equality, openness and change; and, contrariwise, to the opposition to such values as authoritarianism, and insincerity.[21]

Situation and Environment

To Dewey, "In actual experience there is never any such isolated singular object or event; 'an' object or event is always," to him, "a special part, phase, or aspect, of an environing experienced world - a situation."[22] Indeed, "the thinker, like the carpenter, is at once stimulated and checked in every stage of his procedure by the particular situation which confronts him."[23]

Schön concurs with Dewey's view of the complexity of events in

our lived world of experience when he stipulates that ". . . the problems of real-world practice do not present themselves to practitioners as well-formed structures. Indeed, they tend," he argues, "not to present themselves as problems at all but as messy, indeterminate situations." [24]

In a similar vein, he points out that "We are agents-experient,". . . We are *in* the problematic situation, . . . and when we act on it, we act on ourselves. We engage in a continuing conversation with the larger societal situation of which we are a part, . . . we construct a view of the situation; we act from it, thereby changing the situation; but we also elicit "back-talk" which takes the form of unanticipated meanings, problems, and dilemmas." [25]

Practical and Experience

Clearly recognizing the attributes of art which are found in ordinary living, Dewey argued that "the hostility to association of fine art with normal processes of living is a pathetic, even a tragic, commentary on life as it is ordinarily lived." [26]

One of the most utilized phrases in the lexicon of teachers probably is the phrase that one 'learns by experience.' To Dewey this phrase meant,

". . . to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence. Under such conditions," he proclaimed, " doing becomes a trying, an experiment with the world to find out what it is like, the undergoing becomes instruction - discovery of the connection of things." [27]

"Experience," to Dewey, "is the result, the sign, and the reward of that interaction of the organism and environment which, when it is carried to the full, is a transformation of interaction into participation and communication." [28]

Schön stresses the need to respect everyday practice, by developing what he terms "the reflective turn . . . a kind of revolution [in that] it turns on its head the problem of constructing an epistemology of practice. It (reflection) offers, as a first-order answer to the question, What do practitioners need to know?, reflection on the understandings already built into the skillful actions of everyday practice. . . [the] primary concern is to discover and help practitioners discover what they already understand and know how to do."[29]

Action

Always concerned about the impact of fixed purposes, fixed ends,

on the freedom and growth of human beings, Dewey argued that "action restricted to given and fixed ends may attain great technical efficiency; but efficiency," he reminded us, " is the only quality to which it can lay claim. Such action is mechanical (or becomes so), no matter what the scope of the preformed end, be it the Will of God or 'Kultur'. But the doctrine that intelligence develops within the sphere of action for the sake of possibilities not yet given is the opposite of a doctrine of mechanical efficiency." [30]

Clearly perceiving the relationship between knowledge and action, recognizing how knowledge can inform action, Dewey asserted that "... we live in a world wherein we have to act, where action is imperative and unescapable but where knowledge is conditional, dependent upon ourselves. And the consequences of action, that is, what comes from it and remains as a permanent deposit, depend - within limits at least - upon whether or not action is informed with knowledge and is guided by adequate intelligence."[31]

Schön amplifies this by pointing out that "although reflection-in-action is an extraordinary process, it is not a rare event. Indeed," from his observerations of different professional practitioners, he claims that for

some of them "it is the core of practice. Nevertheless," he concedes, "because professionalism is still mainly identified with technical expertise, reflection-in-action is not generally accepted - even by those who do it - as a legitimate form of professional knowing." [32]

Problem

There can be little doubt that Dewey's view of a problem was destined to have a lasting impact on the development of pragmatic thinking. He recognized prior to most that "the difficulties that present themselves in the development of an experience are . . . to be cherished by the educator, not minimized, for they are the natural stimuli to reflective inquiry."[33]

The question of the *source* of problems has always been a difficult problem to comprehend for those untutored in in the thought of Dewey. Traditionalists continue to assert that problems are to be imposed from without on the student. Dewey, however, saw it quite differently, when he stated that "qualification of a situation as problematic does not, however, carry inquiry far. It is but an initial step in the *institution* of a problem. A problem is not a task to be performed which a person puts upon himself or that is placed upon him by others - like a so-called arithmetical

'problem' in school work. A problem represents the partial transformation by inquiry of a problematic situation into a determinate situation. It is a familiar and significant saying," he continued, "that a problem *well put* is half-solved. To find out 'what' the problem and problems are which a problematic situation presents to be inquired into, is to be well along in inquiry."[34]

Drawing directly from the emphasis of Dewey on the need to put a problem well, Schön claims that if practitioners "... are to get a well-formed problem matched to their familiar theories and techniques, they must *construct* it from the materials of a situation that is, to use John Dewey's (1938) term, "problematic."[35]

Pursuing this line of thinking further, Schön argues that "if it is true that professional practice has at least as much to do with finding the problem as with solving the problem found, it is also true that problem setting is a recognized professional activity. Some physicians," he points out, "reveal skills in finding the problems of particular patients in ways that go beyond the conventional boundaries of medical diagnosis."[36]

Not-Yet

By the not-yet I am referring to the consequences of ones choices,

to the outcomes, the ends, the futures being pursued, sometimes being achieved; that which is not definite, yet has a measure of anticipated emergence which represents a form of empiricality, yet is not empirical in the literal sense. This is the normative, visionary domain of human existence, that domain over which one can exercise a measure of choice and control.

Dewey reveals a significant contribution to human activity which can be derived from reflective intelligence when he asserts that "reflection is a process of finding out what we want, what, as we say, we 'really' want, and this means the formation of new desire, a new direction of action. In this process, things 'get' values - something they did not possess before, ..."[37]

Reflective Thought

One can only draw the conclusion from an examination of Dewey's writings that he was mightily opposed to the oppressive power of rational thought, particularly to the belief that rationality was the sole sourse of our understandings. He revealed in much of what he wrote a persisent stress on the nature and importance of reflecting thinking. "To reflect," he claimed in *Experience and Education* "is to look back over what has been

done so as to extract the net meanings which are the capital stock for intelligent dealing with further experiences. It is the heart of intellectual organization and of the disciplined mind."[38] Here we percieve the importance he places on what has been, on the past, not as a constraining realm, but rather as the source of valuable meanings which can aid one in constructing significant interpretations of new experience.

That such is not always easy, perhaps much of the time even painful, is revealed in his belief that "reflective thinking is always more or less troublesome because it involves overcoming the inertia that inclines one to accept suggestions at their face value; it involves willingness to endure a condition of mental unrest and disturbance. Reflective thinking, in short, means judgment suspended during further inquiry; and suspense is likely to be somewhat painful."[39]

Schön concurs with Dewey about the importance of reflection when he asserts that "reflection-in-action has a critical function, questioning the assumptional structure of knowing-in-action. We think critically about the thinking that got us into this fix or this opportunity; and we may, in the process," he continues, "restructure strategies of opportunity; we may, in the process, restructure strategies of action,

understandings of phenomena, or ways of framing problems."[40]

Elsewhere, in a study of The Fagor Cooperatives in Spain, published in a book which was edited by Schön, Greenwood stresses the point that "... the reflective process (like a cultural system in general) is a multiple, diversifying, sense-making process, even in close collaborations over long periods of time. Participants join in for differing reasons and leave with divergent lessons. Collaboration," he stresses, "does not demand the development and enactment of a uniform cultural code, . . "[41]

In an extended passage Schön outlines what he terms ". . . a sequence of "moments" in a process of reflection-in-action: There is . . . a situation of action to which we bring spontaneous, routinized responses. These reveal," he suggests, "knowing-in-action" . . . tacit, spontaneously delivered without conscious deliberation; . . . routine responses produce a surprise - an unexpected outcome, pleasant or unpleasant, that does not fit the categories of our knowing-in-action. . . This," he claims, "leads to reflection within an action-present. . . our thought turns back on the surprising phenomenon and, at the same time, back on itself. At this point," he argues, "reflection-in-action has a critical function, questioning the assumptional structure of knowing-in-action. We think

critically," he believes, "about the thinking that got us into this fix or this opportunity; . . . Reflection," his analysis concludes, "gives rise to on-the-spot experiment. We think up and try out new actions intended to explore the newly observed phenomena, test our tentative understandings of them, or affirm the moves we have invented to change things for the better."[42]

Future

Always one to stress the importance of anticipatory thinking, of projecting ahead, of looking to ends, Dewey was adamant in his belief that "the only power the organism possesses to control its own future depends upon the way its present responses modify changes which are taking place in its medium. A living being," he argued, "may be comparatively impotent, or comparatively free. It is all a matter of the way in which its present reactions to things influence the future reactions of things upon it. Without regard to its wish or intent every act it performs makes some difference in the environment." [43]

Clearly to Dewey the importance of anticipating future outcomes could not be overemphasized; indeed it was a primary characteristic of any who choose to guide their behavior in desireable ways. "Anticipation

is therefore," he claimed, "more primary than recollection; projection than summoning of the past; the prospective than the retrospective . . . . Imaginative forecast of the future is," to this dynamic thinker, "this forerunning quality of behavior rendered available for guidance in the present." [44]

Finally, we need to stress the importance of thinking ahead which Dewey consistently argued was a sign of intelligent action. "Planning ahead, taking notice of what happens, relating this to what is attempted, are," he argued, "parts of all intelligent or purposeful activities."[45]

Consequences

Always concerned about the moral outcomes of all human behavior, Dewey aregued that "the more importance we attach to objective consequences as the standard, the more we are impelled to fall back upon personal character as the only guarantee that this standard will operate, either intelligently in our estimates or practically in our behavior." [46]

Continuously stressing the need to foresee consequences, ends of action prior to the actual action itself, Dewey vigorously stressed the fact that there is "... such a thing as a speculative tracing out of results. Ends are then foreseen, but they do not lay deep hold of a person. They are

something to look at and for curiosity to play with rather than something to achieve. There is no such thing as over-intellectuality, but there is such a thing as a one-sided intellectuality. A person, " he continued, " 'takes it out' as we say in considering the consequences of proposed lines of action."[47]

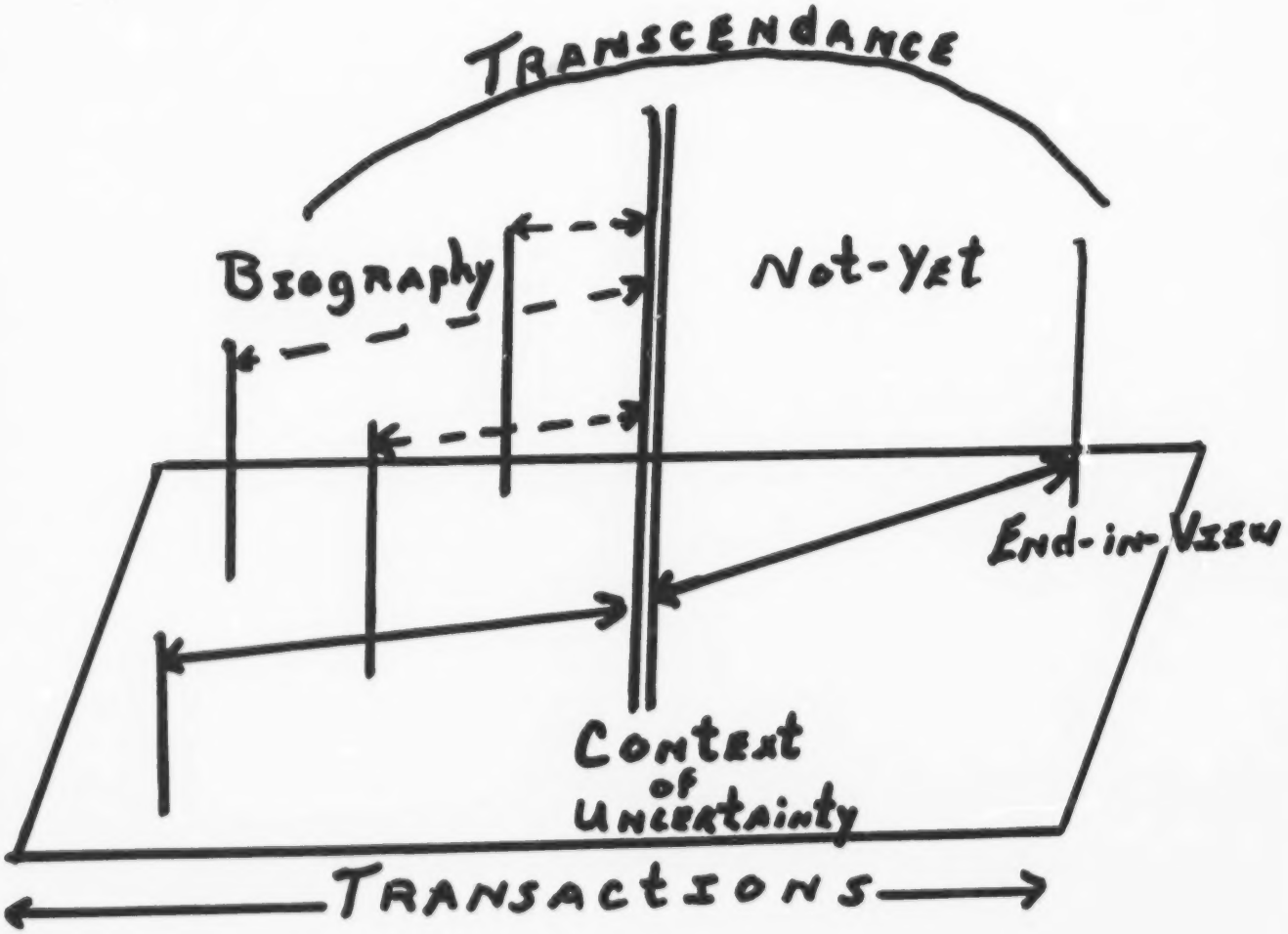
The Physical Model

As I suggested at the outset, my sense of the use of the term 'reflective thinking' as it is employed by different persons in a variety of contexts is that it is not being employed within the sorts of parameters of understanding which are needed if it is to be pursued competently. As a result it has failed to generate the power and respect it ought to have. One way in which this problem might be mitigated is with the use of something other than simply language to represent what reflective thinking entails; hence, the development of a physical model.

In line with the conceptual structures which this paper has suggested are embedded in reflective thinking, at least as reflected in the writing of both Dewey and Schön, the physical model which has been constructed makes it possible to externalize one's intellectual imagry of reflecting thinking thereby enabling one to focus on the following significant components of such thinking: **biography, zone of**

uncertainty, not-yet, knowledge, knowing-in-action and reflection-in-action.

Below is a schematic of the model:



Summary

In this paper I have concentrated on revealing the thought of two thinkers, Dewey and Schön, about the nature of reflective thinking. Understanding their ideas is essential if such thinking is to have a significant impact on the practice of professionals in all walks of life; in our case, particularly school people. A physical model has been employed to facilitate the retention of the significant attributes of reflective thinking, attributes which often reveal themselves almost simultaneously as we encounter the demands of our professional practice.

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